

### **REMARKS**

This response is intended as a full and complete response to the Office Action dated October 13, 2006. In view of the following amendments and discussion, the Applicants believe that all claims are in allowable form.

### **CLAIM REJECTIONS**

#### **A. 35 U.S.C. §§102-103 Claims 5-9 and 11-15**

Claims 5-9 and 11-15 stand rejected under 35 U.S.C. §102(b) as being anticipated or under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 6,159,297 issued December 12, 2000 to *Herchen, et al.* (hereinafter referred to as "*Herchen*"). In response, the Applicants have amended claims 5 and 7 to more clearly recite certain aspects of the invention.

Independent claim 5 recites elements not taught or suggested by *Herchen*. *Herchen* teaches using an interferometer to determine a thickness of a transparent layer on a substrate. The interferometer 175 is coupled to the chamber 15 through a window 170 disposed through the top of the chamber from an optical source 185. However, *Herchen* does not teach or suggest an interferometer endpoint detection system positioned to interact with a surface of a photomask substrate facing a substrate support member, as recited by claim 5.

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983). Here, *Herchen* fails to teach or suggest an interferometer endpoint detection system positioned to interact with a surface of a photomask substrate facing a substrate support member, as recited by claim 5. As *Herchen* fails to teach or suggest each and every elements of the claimed invention, the Applicants submit that the present invention is patentable over *Herchen*.

Furthermore, there is no suggestion discerned in *Herchen* for modifying the devices disclosed therein in the direction of claim 5, nor is there any suggestion of desirability of such modifications. As such, a *prima facie* case of obviousness has not been established as *Herchen* fails to teach or suggest each and every elements of the claimed invention.

Thus, Applicants submit that independent claim 5, and all claims depending therefrom, are patentable over *Herchen*. Accordingly, the Applicant respectfully requests the rejection be withdrawn.

**B. 35 U.S.C. §§102-103 Claims 1, 3-4, 16-20, 22 and 28**

Claims 1, 3-4, 16-20, 22 and 28 stand rejected under 35 U.S.C. §102(b) as being anticipated or under 35 U.S.C. §103(a) as being unpatentable over Japan Patent No. 357149732 to *Taji, et al.* (hereinafter referred to as "*Taji*"). In response, the Applicants have amended claims 1 and 16 to more clearly recite certain aspects of the invention.

Independent claims 1 and 16 recite elements not taught or suggested by *Taji*. *Taji* teaches positioning a luminescent material below a hole formed in a substrate support. Ions and electrons from a plasma pass through the hole during etching and cause the luminescent material to emit a signal through a filter to a detector. The detector further calculates the etch rate of the etching process based on the ions and electrons passing through the substrate support and incident on the luminescent material. As such, the hole through the substrate support must remain uncovered by the workpiece (e.g., substrate) during processing so that the luminescent material remains exposed to the plasma through the substrate support in order for endpoint detection to occur. Therefore, *Taji* does not teach or suggest an endpoint detection system disposed in a the substrate supporting region of a substrate support and configured interface with a side of the photomask substrate disposed on the substrate supporting region, as recited in claim 1; or an interferometer endpoint detection system disposed through a substrate support member and configured to detect one or more test patterns disposed on periphery region of a photomask substrate through a bottom surface of the photomask substrate, as recited by claim 16.

Furthermore, there is no suggestion discerned in *Taji* for modifying the devices disclosed therein in the direction of claim 1 or claim 16, nor is there any suggestion of the desirability of such modifications. As such, a prima facie case of obviousness has not been established as *Taji* fails to teach or suggest each and every element of the claimed invention.

Thus, Applicants submit that independent claims 1 and 16, and all claims depending therefrom, are patentable over *Taji*. Accordingly, the Applicant respectfully requests the rejection be withdrawn.

**C. 35 U.S.C. §§102-103 Claims 5-9 and 11-15**

Claims 1-2, 4-14, 16, 18 and 21-22 stand rejected under 35 U.S.C. §102(b) as being anticipated or under 35 U.S.C. §103(a) as being unpatentable over Japan Patent No. 2001217227 to *Yohei Yamazawa, et al.* (hereinafter referred to as "*Yamazawa*"). In response, the Applicants have amended claims 5 and 7 to more clearly recite certain aspects of the invention.

Independent claim 5 recites elements not taught or suggested by *Yamazawa*. *Yamazawa* teaches measuring thickness difference of a gate oxide layer disposed on a substrate by an endpoint detection system positioned on a top of a processing chamber to predict an endpoint of an etch process. *Yamazawa* does not teach or suggest an interferometer endpoint detection system positioned to interact with a surface of a photomask substrate facing a substrate support member, as recited by claim 5. Furthermore, *Yamazawa* does not teach or suggest a modification to itself that would yield an interferometer endpoint detection system positioned to interact with a surface of a photomask substrate facing a substrate support member, as recited by claim 5.

Thus, Applicant submits that independent claim 5 and claim 7 depending therefrom are patentable over *Yamazawa*. Accordingly, the Applicant respectfully requests the rejection be withdrawn.

**C. 35 U.S.C. §103 Claims 1, 3-4, 16-20, 22 and 28**

Claims 1, 3-4, 16-20, 22 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Herchen* in view of Japan Patent No. 11058225 to *Mihashi, et al.* (hereinafter referred to as "*Mihashi*"). In response, the Applicants have amended claims 1 and 16 to more clearly recite aspects of the invention.

Independent claims 1 and 16 recite elements not taught or suggested by the combination of *Herchen* and *Mihashi*. The teaching of *Herchen* has been discussed above. *Herchen* does not teach or suggest an endpoint detection system disposed in a substrate support. *Mihashi* teaches using an endpoint detector disposed in a center portion of a polishing platen in a chemical mechanical process tool to measure thickness difference of a layer in a chemical mechanical process. *Mihashi* teaches that the endpoint detector views the substrate from the front side of substrate. Thus, *Mihashi* does not provide motivation to move the endpoint detector of *Herchen* to view the substrate from the backside. Therefore, *Mihashi* does not provide teach or suggest a modification to *Herchen* that would yield an endpoint detection system disposed in a the substrate supporting region of a substrate support and configured interface with a side of the photomask substrate disposed on the substrate supporting region, as recited in claim 1; or an interferometer endpoint detection system disposed through a substrate support member and configured to detect one or more test patterns disposed on periphery region of a photomask substrate through a bottom surface of the photomask substrate, as recited by claim 16.

Thus, Applicants submit that independent claims 1 and 16, and all claims depending therefrom, are patentable over the combination of *Herchen* and *Mihashi*. Accordingly, the Applicants respectfully request the rejection be withdrawn.

**CONCLUSION**

Applicants submit that all claims are in condition for allowance. Accordingly, the Applicants respectfully request reconsideration of this application and its early allowance.

If the Examiner believes that any unresolved issues still exist, it is requested that the Examiner telephone Mr. Keith Taboada at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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